

**PATIENT PRESENTING CLINICAL SIGNS**

Gemma Miller History: Elevated liver values, increasing despite medical management  
 Medication: Denamarin, Clavamox, Tramadol

**SPECIES**

Canine

ALP 1277 (previous: 975), BUN 36, Creatinine 0.7, CK 226, Lipase 571, WBC 12.6 with mild monocytosis and thrombocytosis

**BREED**

Beagle Mix

Specific Gravity 1.033

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

**SEX**

FS

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 5.0 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with no uroliths or sediment. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes was noted.

**AGE**

12 years

The area of the aortic trifurcation was free of pathology.

**WEIGHT**

59 Pounds

Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio was maintained. The medulla and cortices were uniform in texture with some increased echogenicity and moderate loss of corticomedullary symmetry and definition expected for the age of the patient. Small cortical cysts were present in the left kidney. No evidence of pelvic dilation was present. The left kidney measured 7.0 cm in length. The right kidney measured 8.1 cm in length.

**INTERPRETED BY**

R. McKenzie Daniel,  
 DVM, DABVP  
 (Canine and Feline)

**Adrenal Glands**

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 2.9 cm length x 0.83 cm width at the caudal pole. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 3.2 cm length x 0.66 cm width at the caudal pole. No evidence of hyperplasia, nodules, or tumors was noted.

**IMAGING PERFORMED BY**

Rebekah Jakum, CVT  
 ARDMS/RVT

**Spleen**

The spleen was mildly subnormal in size with mild asymmetrical medial capsule contour. Generalized parenchyma heterogeneity with multifocal, pinpoint, hyperechoic foci, which may indicate pinpoint areas of microinfarction, fibrosis, or mineralization. These findings are subjectively benign.

**HOSPITAL NAME**

Stanglein VC

**REFERRING VET**

Dr. Rothrock

**Liver/ Gallbladder**

The liver presented enlarged in size. The parenchyma of the liver was subjectively normal in echogenicity compared to the spleen and renal cortices. The liver parenchyma was uniform with a mildly coarse echotexture. The capsule of the liver was symmetrically rounded to mildly swollen in margination. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was non-distended in size with primarily anechoic luminal content. The cystic and common bile ducts were normal.

**INVOICE**

12516

**DATE**

11.2.2021



**PATIENT**

***Gastrointestinal***

Gemma Miller

The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach was empty with no signs of ileus, obstruction, or foreign material.

**SPECIES**

The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. The lumen of the small intestine was empty with no signs of ileus, obstruction, or foreign material.

Canine

Normal visible colon wall layers were present with apparent formed feces in lumen.

**BREED**

***Pancreas***

Beagle Mix

The parenchyma of the left limb, body, and right limb of the pancreas presented isoechoic to the adjacent omental fat. A normal curvilinear capsule contour of the pancreas was present. The visible pancreatic duct was normal. No signs of active inflammation or neoplastic disease were evident.

**SEX**

***Free Abdomen***

FS

No overt lymphadenopathy or peritoneal effusion was present.

**AGE**

**ULTRASONOGRAPHIC FINDINGS**

12 years

***Primary Findings***

**WEIGHT**

- Hepatopathy - subjectively benign
- Bilateral chronic renal changes with left kidney cortical cysts
- Age-related splenic changes

59 Pounds

**INTERPRETED BY**

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

R. McKenzie Daniel,  
DVM, DABVP  
(Canine and Feline)

Overall, the appearance of the liver was nonspecific yet consistent with benign hepatopathy / hepatomegaly. Potential Idiopathic vacuolar hepatopathy may be considered a primary differential diagnosis, given the ALP elevation and lack of concurrent gallbladder debris. Potential for inflammatory hepatic parenchymal disease is possible with hepatic neoplasia considered a less likely differential diagnosis. Further assessment may include hepatic FNA for screening cytology, assuming normal clotting status. In addition to Denamarin, Ursodiol may prove beneficial, given its anti-inflammatory and immunomodulatory effects within the liver.

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ARDMS/RVT

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No overt suspicion of underlying endocrinopathy, given the lack of reported clinical signs and urine specific gravity (>1033). However, full adrenal work up could be considered if clinical suspicion for hyperadrenocorticism.

**REFERRING VET**

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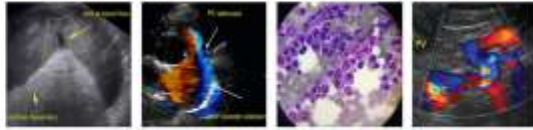
Further renal staging to include urine C/S and protein: creatinine ratio on sterile urine sample may be considered.

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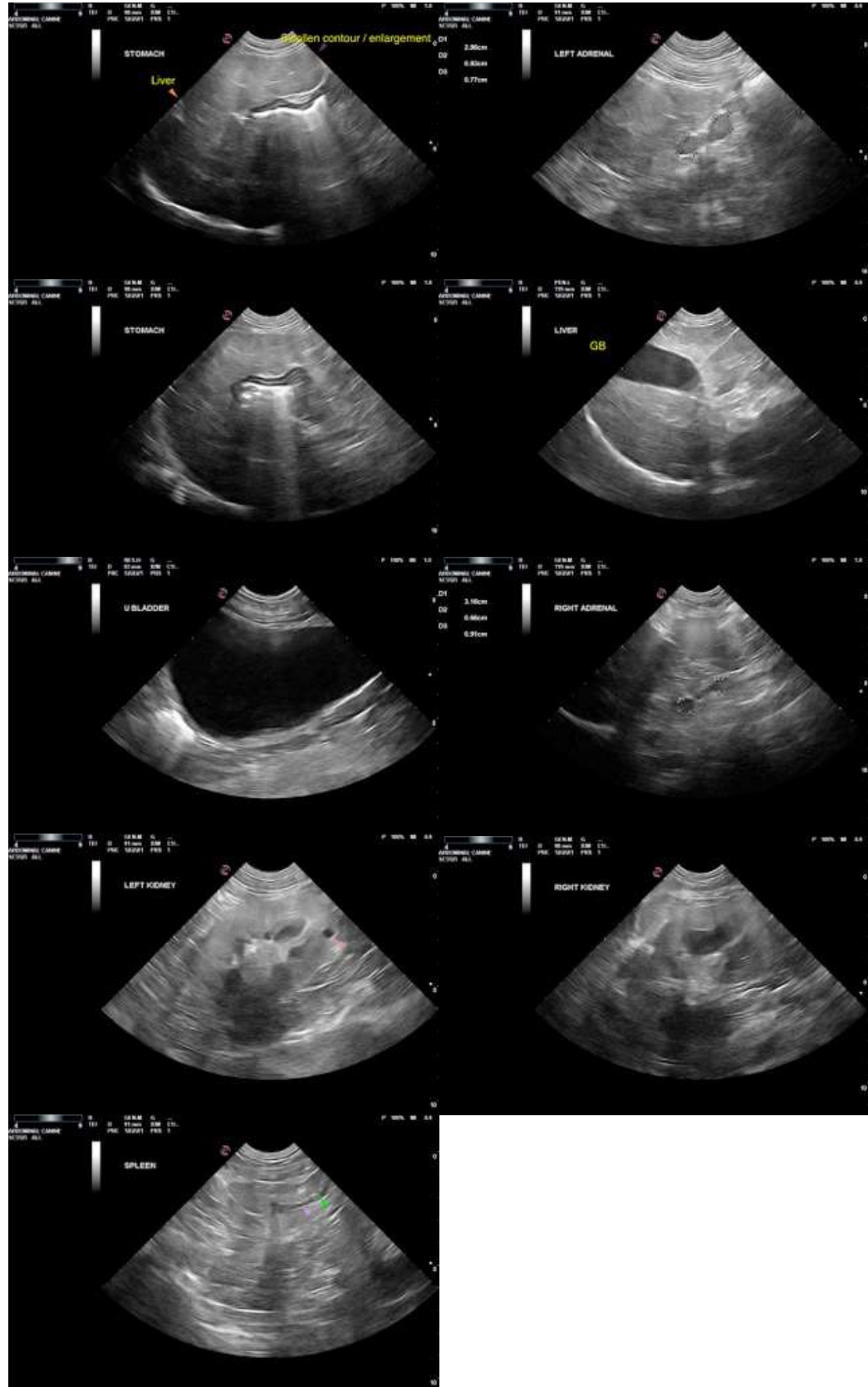
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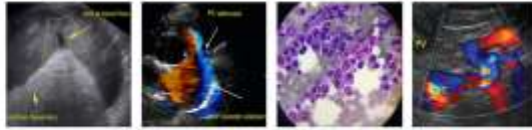
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**The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.**

Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance please contact me.

**R. McKenzie Daniel, DVM, DABVP (Canine/Feline Practice)**  
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